STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

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June 7, 1994

Mr. James D. Bauer
Office of Environmental Assurance,
Permits, and Policy
U.S. Department of Energy
P.O. Box 550
Richland, WA 99352

Mr. R. E. Lerch
Restoration and Remediation
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Dear Messrs. Bauer and Lerch:

Re: 216-B-3 Expansion Ponds Closure Plan, Revision 1, Notice of Deficiency

This letter formally transmits to the U.S. Department of Energy and Westinghouse Hanford Company the Notice of Deficiency (NOD) generated by the Department of Ecology. The 216- B-3 Expansion Ponds Closure Plan, Revision 1, was evaluated for compliance with the Dangerous Waste Regulations (WAC 173-303), and applicable closure guidance.

This NOD is to supersede the draft NOD provided February 15, 1994. Additional comments are included in this version that were not in the previous draft NOD, such comments are indicated with an asterisk (*).

Primarily, this NOD is to clarify, and formally transmit comments generated from review of the 216-B-3 Expansion Ponds Closure Plan.

If you have any questions, feel free to call me at (509) 736-3019.

Sincerely,

Jeanne J Wallace

Jeanne Wallace, B Pond Unit Manager
Nuclear Waste Program

JW:sl
Enclosure

cc: Cliff Clark, USDOE
Roger Bowman, WHC
Sue Price, WHC
Fred Ruck, III, WHC
Dan Duncan, EPA
Administrative Records:
216-B-3 Expansion Ponds
216-B-3 Main Pond/200-BP-11 Operable Unit

216-B-3 B EXPANSION PONDS CLOSURE REV. 1
NOTICE OF DEFICIENCY
June 1994

This Notice of Deficiency (NOD) is to supersede the rough draft that was provided on February 15, 1994.

No.	Page/Line Number(s)	
		Forward
1.	iii, 1 and 40	Postclosure requirements are not addressed in the forward chapter of the closure plan. Postclosure requirements must be addressed to fulfill the requirements of WAC 173-303-650(6)(c).
		Chapter 1.0 Introduction
2.	1-1, section 1.1	This section focuses on the pre-existing 216-B-3 TSD unit prior to division of the pond system into two separate units. The expansion ponds are addressed as part of the original B Pond system with no differentiation between the individual TSD units. The closure plan must address the expansion ponds as an independent TSD unit. Modify the text accordingly to distinguish the two units and avoid confusion.
3.	*1-2, 2-3	The plan states that revision 3 of the Part A is included in section 1.3. This is incorrect. The Part A, Form 3, is contained in a separate chapter of the closure plan. In addition, a new Form 3, revision 0, was generated for the Expansion Pond TSD unit and submitted to Ecology for approval December 16, 1993. Revise text accordingly.
4.	1-2, section 1.2	The closure strategy presented in this section addresses only the composition of the 200 BP-11 operable unit. This is inadequate and not appropriate. This unit is a RCRA TSD unit located within an operable unit, but this will have little or no impact on the closure of the TSD unit. The TSD unit will be closed in accordance with the Dangerous Waste Regulations (WAC 173-303). Modify the text to elaborate on the proposed closure of the Expansion Ponds. Also, provide an overview of closure performance standards.
5.	1-2, 28-30	Include a citation to the Model Toxics Control Act in addition to those provided.
6.	*1-2, 36-38	The last sentence of the paragraph which addresses coordination of timing for investigation and remediation of the TSD and the associated operable unit is irrelevant to the closure of the Expansion Ponds. Delete the sentence.

7.	1-2, 41	Provide text to address the other two waste management units. Explain the criteria for qualifying the ditches as past practice waste management units. Describe the extent and type of contamination expected to be contained in the 216-B-1 and -2 ditches, respectively.
8.	1-3, 15	"Currently, the . . . Part A . . . is being modified. Modify the text to reflect the current status of the Part A, Form 3 for the Expansion Ponds.
9.	1-3, 31	It is stated that the Part A is based on the chemical discharge history of the PUREX plant. It is inappropriate to base the disposal history and Part A on only one of the many facilities which discharged to the B Pond system. Therefore, if the Part A, Form 3 for the lobes should reflect any discharges, or potential discharges, from all facilities discharging to the expansions ponds from October 1983 to present.
10.	1-4, 34-36	The sentence refers to the state and federal Dangerous Waste Regulations. The Dangerous Waste Regulations are Washington state regulations. The Code of Federal Regulations are federally mandated regulations.
11.	1-5, 32	Several extremely hazardous wastes (EHW) were released to the unit. Briefly addresses if any EHW constituents were detected from sampling events conducted at the unit.

Chapter 2.0 Facility Description and Location Information

12.	2-1, 52	The date should be 1994, not 1995, as stated.
13.	2-3, 31-36	Specify when spillways were constructed. Note: It is difficult to determine the location of spillways discussed in text from the figures provided in this chapter. In addition to those figures presented in chapter 2, provide a sketch of the entire pond system identifying the location of each spillway or interconnection between ponds. Indicate which spillways are functioning and those that are not.
14.	2-3, 49	Specify how materials generated from the modification of the spillway 216-B-351 were managed.
15.	2-4, 24-26	Discuss the disposition and management of soil excavated from the 3A Pond bottom.
16.	2-6, 5-7	Specify areas disturbed, and indicate the location(s) on a map of the B pond System.

17.	2-6, 10	Besides monitoring dike integrity, specify if other drivers for installing the piezometers (i.e., regulatory, TPA, etc.). Provide an areal diagram indicating the location of the piezometers indicating which are still functional, if any. Clarify if functioning piezometers are still utilized to monitor saturated flow. If so, how is this information evaluated and utilized, and where is it compiled.
18.	2-6, 39-49	This paragraph is convoluted and full of contradictions. Explain why a drop in water level is not considered probable. Other groundwater monitoring systems should be able to confirm or refute the current piezometer readings. Confirm whether the groundwater level has decreased or not.
19.	2-6, 41	A decrease in the infiltration rate of expansion pond 3A is presented as the reason for the decrease in the water table. This is not consistent with page 2-4, 24-29, which would indicate an increase in the infiltration rate due to the excavation of the trench beneath the 3A Pond. The first sentence states the flow to the pond system was reduced. This would appear to be a more likely reason for the watertable decline. Modify text to clarify the current status of the groundwater dynamics associated with the unit.
20.	2-6, 46	Integrity testing of the piezometers was conducted in 1986. State if there was any effort to correlate piezometer readings data with surrounding groundwater monitoring data.
21.	2-7, 26	Clearly define project X-009.
22.	2-7, 33	The security information section of the closure plan does not address the lack of a 24-hour surveillance system or an artificial or natural barrier which completely surrounds the unit as required by WAC 173-303. Access of wildlife to the unit and the ingestion of pond water are not addressed. Modify text accordingly.
23.	2-7, 35	The text states that "[a]n effective security program is maintained . . ." Such a statement is not justified by the argument provided. Explain why the system is not in full compliance with the Dangerous Waste Regulations, WAC 173-303.
24.	2-8, 1-3	The text states that appropriate radiological warning signs are present. First, the required hazardous/dangerous waste unit warning signs required by WAC 173-303 are not addressed, and second, this implies that radioactive contamination exists at the unit. Revise text to address both issues.
25.	F2-19, Figure 2-19	This figure is difficult to interpret. Provide a figure which identifies the location of all existing and pre-existing piezometers in relation to the entire pond system.
26.	T2-1, Table 2-1	Provide another column in the table which indicates the depth to the watertable as indicated by the

groundwater monitoring systems in the area. Provide reference to source and date of information.

Chapter 3.0 Process Information

27. 3-1, 13 — The statement "[o]ther waste streams may be discharged to the 216-B-3 Pond System in the future" is presumptive and is not applicable to the closure of the expansion ponds. Remove statement from the document.

28. 3-1, 22 — See comment regarding Figure 3-1.

29. 3-1, 30 — Specify the current destination of cooling water used in heating and cooling operations.

30. 3-1, 32 — Indicate on a pipe diagram all radiation monitors used to divert unintentional release of radionuclides to the pond system.

*Address cumulative affects of releasing "de minimis" amounts of radioactive material to the pond system. Elaborate on the basis for the "predetermined radiation level" (i.e., risk, DOE Orders, etc.). Define "basin" and describe the specific basin being addressed.

31. 3-1, 46-48 — Elaborate on differences in the effluent streams discharged to the B Pond System from PUREX before, during, and after upgrading the facility.

32. 3-2, 5 — The opening paragraph of this section leads one to believe that the PUREX chemical sewer no longer discharges to the B Pond System, but later text states that "discharge . . . comes from the chemical sewer." Modify text to specify if the PUREX chemical sewer still discharges to the B Pond System. In addition, address the composition of continued discharges.

33. 3-2, 8-10 — Define "past." Discuss the 216-A-42 diversion basin. Specify if it is a radiation detector, diverter, or both. Describe maintenance, calibration, and tracking of data produced by the diverter.

34. 3-2, 10-14 — Provide a description of a crib, theoretical operation, and streams typically discharged to such units. Elaborate on the criteria to release specific volumes of waste to specific cribs.

35. 3-2, 16-18 — Quantitatively and qualitatively define "high" in regard radionuclide content and the source of the definition. Provide date(s) in which monitoring for radiation and pH was initiated.

36.	3-2, 18	Address the potential for release due to reaction time required for manual diversion of corrosive chemical discharges. Specify if discharges occurred, and if so, describe reporting, tracking, and response procedures.
37.	3-2, 35-37	The criteria for determining which materials were within "proper specifications for disposal to the environment" must be incorporated into the closure plan. The analysis described in line 44, page 3-2 is inadequate to determine if a material designates as a dangerous waste per the Dangerous Waste Regulations, WAC 173-303.
38.	3-3, 1-41	Again, it is unclear if the discussion initiated at this point occurred in the past or is on-going. The opening paragraph to this section leads one to believe these activities are no longer occurring. Modify text to clarify if the PUREX chemical sewer currently discharges to the B Pond System.
39.	3-3, 26	Specify what containment dikes contained or surrounded.
40.	3-3. 34.	Describe the B-669 elementary neutralization system.
41.	3-3. 43-46	It is stated the "[a] pH meter monitors . . . for radiation and corrosion." Modify text to correct error.
42.	3-5, 16	Specify the scope, date, and duration of upgrades.
43.	3-5, 25-31	Provide a discussion of how wastes were removed and managed from tanks in the canyon. Provide a diagram indicating the location of the tanks and piping within the facility. Describe the diversion mechanism(s).
44.	3-7, 30-32	Specify the time frame in which B Pond may have received out-of-specification chemicals from PUREX.
45.	3-7, 40-41	Specify date when probes were installed in the tanks.
46.	3-7, 40-50 to 3-8, 1-5	It appears that the text provided here is verbatim to that which is provided in an earlier section 3-5, 33. If the text is correct, provide a statement referring back to the earlier section to highlight similarities, or correct, if in error.
47.	3-8, 7-29	Describe how surveillance of makeup tanks and catch tanks performed. Indicate if a backup system existed.
48.	3-8, 33	Define "appropriate level."
49.	3-8, 37	Specify date in which route was isolated.

50.	3-8, 48-50	Specify analysis conducted to determine if collected material would be disposed of, or used.
51.	3-9, 13-17	Specify sampling and analysis conducted.
52.	3-9, 24-26	Specify corrosives discharged, and estimated concentrations at the point of discharge (i.e., when it exited the boundary of the building).
53.	3-10, 15-21	Explain why steam would exist in a cooling water line.

Chapter 4.0 Waste Characteristics

54.	4-1, 6-8	The statement "[c]ontrols have been implemented since 1984 to eliminate any potential to discharge dangerous waste to the 216-B-3 Ponds System" is misleading. Potentially contaminated waste water is currently being released to the pond system.
55.	4-1, 16-17	The statement "[o]ther waste streams may be discharged to the 216-B-3 Pond System in the future" is presumptuous and leaves room for broad interpretation and confusion. It may be interpreted that regulated dangerous or radioactive waste will continue to be discharged to the system. It also assumes that a Waste Water Discharge Permit will be issued to allow discharge to this unit. Delete sentence. It is not necessary or applicable to the closure.
56.	4-1, 45-51	Explain how waste streams were monitored. Provide a summary of the information gathered during monitoring and where it is compiled.
57.	4-1, 49-51	Provide a description of the radiation detectors employed, the sensitivity, and the types of radiation measured.
58.	4-2, 26-29	The text states that samples are composited over a month and then analyzed. This contradicts a previous section in the closure plan that composite liquid samples were collected weekly. Correct or clarify inaccuracy. Specify method of composite sampling, analysis, and analytical parameters.
59.	4-2, 50-51	Provide a copy of the application for certification of proposed designation and a discussion of the final disposition of the application for streams which were/are discharged to B Pond. Specify the duration of discharges to each individual pond.

60.	4-3, 3-6	It is not clear if the WHC-EP-0367 report proposed that current or past streams be classified as nondangerous. Provide the criteria for establishing the nondangerous designation. Modify text accordingly.
61.	4-3, 24-25	Clarify if Table 4-2 includes chemicals which may have only been used in a one time campaign.
62.	4-3, 41-44	This paragraph contradicts itself. How could a discharge have occurred in 1987 if administrative and physical controls eliminated dangerous waste discharges in 1984? See comment addressing 4-1, 6-8. Modify text to correct inconsistency.
63.	4-4, 13	Contradicts 4-3, 41 which states "administrative and physical controls eliminated dangerous waste discharges in 1984." Correct inconsistency.
64.	4-4, 14-20	A pH of 2.30 would be considered more than slightly acidic and would barely avoid being regulated as a dangerous waste. It is the generators' responsibility to properly designate and manage their waste from generation to disposal. Such close calls based only on theoretical knowledge would be considered haphazard, especially since it is not apparent how such a dilute acid solution would generate such a low pH. Elaborate on calculations and assumptions which designations were based. Specify if a pH meter(s) was used, and if so, the error tolerance of the meter(s). If a pH meter(s) was used explain how it was standardized.
65.	4-4, 35-49	Contradicts 4-3, 41 which states "administrative and physical controls eliminated dangerous waste discharges in 1984." Correct inconsistency.
66.	4-5, 24-27	Define "at the point the chemical sewer line enters the environment" (i.e., when lines exit building or release to open ditches, etc.). The term as used in the text does not appear to be consistent with WAC 173-303-040 definition of environment. It is not appropriate to designate waste in such a manner. Wastes must be designated in accordance with WAC 173-303-070 as generated.
67.	4-5, 35-37	The second sentence is unsubstantiated and will be removed from the text. Due to the admitted lack of records generation and maintenance regarding waste discharges and disposal in the past, such cites to lack of documentation is inappropriate, misleading, and will not be allowed to support the proposed closure.
68.	4-5, 44-48	Clarify if radioactive wastes were, or were not, released to the B Pond system following diversion to the 216-A-42 Diversion basin. Explain how the final destination of effluent was decided among the alternative disposal sites.

69.	4-6, 3-5	The second sentence is unsubstantiated and will be removed from the text. Due to the admitted lack of records generation and maintenance regarding waste discharges and disposal in the past, such cites to lack of documentation is inappropriate, misleading,and will not be allowed to support the proposed closure.
70.	4-6, 37-40	Provide justification for the assumption that 1969 was a typical year operating, and therefore, would provide a valid estimate of discharges from B Plant.
71.	4-7, 31-34	Describe the expected products of the precipitation reaction of trisodium phosphate, calcium chloride, strontium and any other waste already released to the pond system. Discuss the physical and chemical characteristics of such products such as mobility, solubility, etc.
72.	4-7, 41-51	Elaborate on the purpose and function of the pump pits, sumps, 211-B storage tank area, and tank storage basins. Describe types and purpose of materials stored in these tanks.
73.	4-8, 22-24	The second portion of this sentence is unsubstantiated and will be removed from the text. Due to the admitted lack of records generation and maintenance regarding waste discharges and disposal in the past such cites to lack of documentation is inappropriate, misleading and will not be allowed to support the proposed closure.
74.	4-8, 38-40	This sentence is unsubstantiated and will be removed from the text. Due to the admitted lack of records generation and maintenance regarding waste discharges and disposal in the past such cites to lack of documentation is inappropriate, misleading and will not be allowed to support the proposed closure.
75.	4-9, 12-16	Explain why the trade name chemicals are astricted here. It appears as if they were intended to be footnoted, but were not. Specify the percentage of sodium hydroxide and EDTA in DEARTROL, the percentage of sodium sulfite in DEARBORN, and other chemical constituents found in these products.
76.	4-9, 22 and 29	The document WHC-EP-0342 is not included in the closure plan, or referenced in chapter 9. Incorporate applicable sections of appropriate date into the closure plan and/or the administrative record.
77.	T4-2	Clarify why trade names are astricted. It appears as if they were intended to be footnoted, but were not.

The information provided in this chapter does not support clean closure which is proposed for the expansion ponds. This chapter convolutes closure of the expansion ponds by admitting that the groundwater is contaminated but makes no effort to distinguish the source (expansion ponds, the main pond/ditch, or any other source). The impact of the expansion ponds on the groundwater, independent of other sources, is not addressed. Nor is evidence provided to suggest that contamination is from sources other than the expansion ponds. If it cannot be demonstrated that the expansion ponds did not contribute to the contamination of the groundwater, clean closure is not an option.

This chapter is an apparent excerpt from the original closure plan which addressed the entire pond system as one TSD before the unit was divided into two TSD units. The expansion ponds, as a unit, are literally disregarded. The entire chapter is out-dated, incomplete, does not distinguish, or support, closure of the expansion ponds independent of the B Pond system. The phrase "will be" is recurrent throughout the chapter, even in reference to follow-up on activities that occurred in the late eighties. Verify if these activities have been completed, or not. Many of the activities will be required, before closure can be certified.

This chapter is critical for clean closure. Because evidence of groundwater contamination exists, RCRA corrective action for the aquifer located under the unit must be accurately, thoroughly, and honestly addressed. It is suggested that the closure plan lay out the purposed characterization and remediation of the aquifer in the initial sections of the chapter. State the complexities associated with the site due to the commonality of the aquifer with numerous potential contamination sources, and determine if vadose zone sampling and groundwater monitoring data from the expansion ponds can demonstrate that this unit did not contribute to the contamination of the aquifer. Because the aquifer is contaminated, it will be addressed through RCRA/WAC corrective action to be conducted in association with the main pond and ditch. Therefore, the groundwater contamination will be adequately addressed through appropriate and applicable regulations.

78. 5-1, 1-11

The introductory paragraphs discuss only the B Pond system. There is no discussion or distinction of the expansion ponds as an independent TSD unit. This is confusing and inappropriate. The entire B Pond system groundwater monitoring network may need to be addressed as a whole, but for closure of the expansion ponds, impact on the aquifer must be distinguished and addressed. If clean closure is to be achieved, it must be established that the expansion ponds did not contaminate the aquifer, and therefore, can, and should be closed separate from the rest of the ponds system.

Modify text to discuss how the expansion ponds are distinct from the main pond and ditch (besides a separate Form 3), and how it will be demonstrated that no impact to the upper most aquifer has occurred from this unit. This comment applies to the entire chapter. Perhaps, provide discussion of perplexities of this unit closure as mentioned above.

79. 5-1, 29-31 Explain the criteria for determining the source of contaminants potentially detected in the groundwater monitoring system. Describe how contaminants without distinguishable sources will be handled.

80. 5-1, 33-37 Characterization of groundwater contamination must be completed prior to closing this unit. This is clearly stated in the following paragraph, in the text, which cites the TPA (although regulatory requirements are not addressed). The ponds appear to have an adequate monitoring network, and data has supposedly been collected since the late eighties. Explain why characterization has not been completed. If characterization has not been completed, provided a timeline for completion.

81. 5-1, 50-52 It is inadequate to limit sampling for Appendix IX constituents to one event.

82. 5-2, 10-13 Information regarding the expansion ponds contained in these documents must be incorporated into the closure plan.

83. 5-2, 15-31 The RCRA Groundwater Monitoring Progress Reports cited are outdated. It is stated that additional reports will be published quarterly, but the last report cited is dated 1989. Provide instruction on how to locate and access current reports. This also applies to the annual environmental reports, and the characterization report "to be prepared." This section is blatantly out-of-date, and does not address the expansion ponds as a unit.

84. 5-2, 34-52 This section does not distinguish the expansion ponds from the rest of the pond system. It is acceptable to address the monitoring system surrounding the entire B pond system, but the expansion ponds must be distinguished and addressed independently for closure. The groundwater monitoring requirements must be addressed for the expansion ponds. Also, address the impact on the groundwater mound in regard to the proposed closures of both units.

85. 5-3, 8-10 The closure plan acknowledges groundwater contamination, but provides no discussion of source, extent, or proposed mitigation or remediation. The contamination plume associated with the B Pond groundwater mound must thoroughly discuss proposed RCRA/WAC corrective action.

86. 5-3, 15-17 Downgradient monitoring wells for the main pond are discussed with only peripheral mention of the expansion ponds. The discussion needs to focus on the expansion ponds downgradient wells, and the criteria

for speculating that contamination did not originate from the expansion ponds.

87. 5-3, 25 — Explain what is considered the top of the aquifer, and the expected impact of moving the groundwater mound if liquid discharge to the main pond is discontinued, while increased to lobes B and C.

88. 5-3, 35-36 — From observing Figure F5-2, it appears that an adequate number of monitoring wells exist, and that monitoring has been conducted for some time. Explain why the adequacy of the monitoring network has not been evaluated if monitoring was initiated in 1988. Address the adequacy of the expansion pond monitoring system, independently from the rest of the system.

89. 5-4, 1-8 — Clarify if accurate monitoring data was produced during the active life of well 699-42-40A. Explain why this does not meet WAC 173-303 requirements for use as a resource protection well, and what is proposed for remediation or decommissioning. Explain the criteria for placing the well where it is located, and if other wells may compensate for the loss of this monitoring point. The information from this well may be valuable, due to the fact of its proximity to the expansion ponds.

90. 5-4, 11-25 — The references provided here seem dated and do not address or distinguish the expansion ponds from the rest of the B pond system. Verify if these documents adequately address the expansion ponds and if they have, or have not, been completed.

Specify how analytical method are "adapted" from EPA (1986b). It is not clear why groundwater sampling and other procedures were generated. Specify regulatory procedures or guidance consulted to develop the modified analytical methods.

91. 5-4, 29 — Specify the duration, and location where samples are archived.

92. 5-4, 5-51 — Specify how analytical method are "adapted" from EPA (1986b). It is not clear why groundwater sampling and other procedures were generated. Specify regulatory procedures or guidance consulted to develop the modified analytical methods.

93. 5-4, 52 — Verify if the hydrogeologic characterization report addresses the expansion ponds and if it has been completed, and who prepared it.

94. 5-5, 1-12 — Specify if the logging parameters are presented accurately, and reflect the most current information. Explain the value of information gathered from monitoring these parameters.

95.	5-5, 20-21	Specify if the downgradient wells discussed here are downgradient of the expansion ponds, which is what should be discussed here.
96.	5-5, 23-25	Discuss how this testing pertains specifically to the expansion ponds.
97.	5-5, 38 & 47	Specify if the procedures cited here have been evaluated by regulatory authorities, or revised since 1989.
98.	5-6, 10-16	Explain the basis for the decision to analyze only those analytes discussed here, and describe a 'regular' list of constituents. Limiting analysis for Appendix IX and WAC 173-303-9905 constituents to one event is not adequate.
99.	5-6, 20	See previous comments regarding PNL 1989 procedures.
100.	5-6, 31-38	The closure plan states that quarterly groundwater monitoring from background wells 299-E18-1 and 299-E32-4 was initiated in November 1988, but statistical analyses of indicator parameters has not been completed. Statistical analysis of the indicator parameters must be included in the final closure plan along with a thorough description of the statistical methods and criteria used in the analysis. A table comparing the analytical results of parameters and constituents from background and downgradient groundwater samples should also be included.
101.	5-6, 47-48	The phrase "to date" is in question due to evidence that this chapter, as written, does not reflect current conditions.
102.	5-6, 50-51	Specify depth to the water table is in the vicinity of the expansion ponds. Data acquired during vadose zone sampling indicated a much shallower watertable in certain locations. Provide a table presenting groundwater elevations and corresponding dates of the sampling.
103.	5-7, 1-7	Again, address the expansion ponds distinctly from the rest of the unit.
104.	5-7, 23-32	Explain how the decision was made to analyze for only those analytes discussed. The quarterly reports cited here are limited (one year), and dated 1988-89. The period of data discussed is inadequate. This section must address data generated from initiation of groundwater monitoring to present. Current data evaluation will be required to close the expansion ponds.
		Specify if all wells have, or have not, been analyzed for listed constituents.

105. 5-7, 45-46 — The information presented in the Table 5-3, is difficult to understand and should be reformatted and put in a more readable form. It is not clear why Appendix IX/WAC 173-303-9905 constituents are not included in this table.

106. 5-7, 52 — Explain how CRQLs compare with maximum concentration limits. Specify if detection limits were instrument or method limits.

107. 5-8, 1-4 — Specify if detection limits were instrument or method limits. Explain the significance of 60 to 70 ppb TOC.

108. 5-8, 10-13 — Explain how it was determined that well 699-42-40B samples were not representative of actual groundwater quality. Explain if decommissioning of this well will significantly impact the monitoring network. Specify if, when, and how this well was decommissioned.

109. 5-8, 15-30 — The tritium plume discussed here, and depicted in figure 5-4, leaves no doubt, that the B Pond System has impacted the groundwater surrounding the unit. Because it has been clearly demonstrated in this portion of the closure plan that the groundwater has been impacted, clean closure is not an option.

Due to the lack of distinction between the main pond/ditch and the expansion ponds impacts on groundwater, clean closure cannot be evaluated for the expansion ponds. In order to achieve clean closure for the expansion ponds, it must be demonstrated that the groundwater has not been impacted by hazardous constituents or waste released from this unit. The closure plan fails to support this argument.

Explain the range of magnitude of tritium concentrations throughout the monitoring network, focusing on the expansion ponds.

110. 5-8, 23-30 — The last sentence in this paragraph states "[t]o minimize overlap between RCRA and CERCLA investigations for the operable unit that includes B Pond, tritium will be addressed with the 200-BP-11 operable unit."

This statement is incorrect and must be removed from the closure plan. First, WAC 173-303/RCRA, corrective action will address releases of hazardous constituents *and* waste released from RCRA TSDs, including B Pond. It may be appropriate to coordinate management of the plume under the two regulations, but WAC/RCRA corrective action will not be disregarded. It is also premature to state how the plume will be addressed. Second, the exact title of the operable units is not known, but the groundwater under the B Pond system consists of two operable units. The unit cited is a source operable unit, which addresses only surface and vadose zone contamination, not groundwater.

111. 5-8, 32-45

The tritium map presented in figure 5-4 is cited to be from Connelly et al. 1992. This is incorrect, figure 5-4 provided in the closure plan is an excerpt from Serkowske et al., 1988. It is also stated that the (assumed 1992) map is not indicative of current contamination conditions.

Correct citation error, and provide plume maps based on most current data. Clean closure cannot be achieved unless it can be demonstrated that the expansion ponds have not released hazardous constituents or waste to the groundwater. It may be appropriate to argue that the main pond/ditch is, or was, the source of contamination, and that corrective action addressing the aquifer would be addressed during the postclosure and/or correct action period of the main pond/ditch TSD.

Explain how the concentration of the tritium plume has decreased (i.e., discontinued discharge, dilution, etc.).

112. 5-8, 47-52

PUREX is identified as the primary contributor to the tritium & 5-9, 1-11 & 5-9, 1-11 contamination. Earlier chapters clearly demonstrated that PUREX was the major source of discharge to the B Pond system. Explain other pathways in which PUREX contributed to the tritium contribution plume, and how these can be distinguished from B Pond contributions.

Specify if the expansion ponds contributed to the tritium plume or not. Provide discussion and supporting data to illustrate any impact the expansion ponds had on groundwater. This must be completed before closure can be certified.

113. Figure 5-4

Is referred to in this section. See comment regarding 5-8, 32-45.

114. 5-9, 13-25

QA/QC data evaluating laboratory performance is said to be analyzed monthly, but only limited data information between November 1988 and August 1989 is discussed. The period discussed is inadequate. This section must address the data generated from initiation of the monitoring program to present. Current data evaluation will be required for closure of the expansion ponds.

115. 5-10, 12-23

The groundwater quality assessment must be completed before closure can be certified. The reference cited is dated, and cannot possibly address newly promulgated regulations. Revise this section to reflect current regulatory requirements and WAC 173-303-645.

Explain the term "significant"

116. 5-19, 47-52 & 5-20, 1

Address groundwater mounding and transmissivity characteristics under the expansion ponds.

117.	5-20, 13-16	Address the expansion ponds flow patterns, distinguishing any characteristics unique from the rest of the B Pond system.
118.	5-21, 47-51	Address the expansion ponds, distinguishing any unique characteristics from the remainder of the B Pond system.
119.	5-22, 46-52 & 5-23, 1-3	Address the expansion ponds, distinguishing any characteristics unique from the rest of the B Pond system.
120.	5-23, 12-14	Explain why the follow-up report on slug tests conducted in 1989 has not been completed. Verify if the characterization report has, or has not, been completed, and update text accordingly.
121.	5-25, 10-52	Address the expansion ponds distinguishing any characteristics unique from the rest of the B Pond system.
122.	F5-2	One or more figures need to be provided to clarify the information presented in Figure 5-2. It would be useful to provide an enlarged figure of the B Pond system and associated groundwater monitoring network distinguishing between the Main Pond/Ditch TSD and the Expansion Ponds TSD. Specify if all wells presented in the figure are operational and compliant with applicable regulations.
123.	F5-4	This figure is out-dated, and not consistent with citations and references provided in text. Provide a map based on current data. Any other contamination detected in the expansion ponds monitoring network must also be depicted with a plume map.
124.	F5-6	The quality of this figure makes it nearly useless. Upgrade if possible.
125.	T5-1	Specify if depth footnoted by "a" is from ground surface or sea level.
126.	T5-2	Footnote "a" needs clarification. Elaborate on basis for "subject to change" and why only federal regulations are addressed. Specify the regulatory driver for each constituent/parameter.
127.	T5-3	This table needs to be reformatted and presented in a more readable and useful form. Provide a definition of the qualifier/flag "F".
128.	T5-4	This table does not appear to address the two upgradient wells associated with the groundwater monitoring network associated with the B Pond system. Provide table presenting the upgradient wells which will be utilized to determine background for the Expansion Ponds closure.

129. 6-1, 19-22

The text states that clean closure is contingent upon verification that constituents remaining in the vadose zone and originating from disposal of dangerous waste in the ponds are not present in concentrations that represent a threat to human health or the environment.

This statement is not consistent with regulatory language. Modify text to reflect compliance with the closure performance standards which requires demonstration that dangerous waste, dangerous constituents, dangerous waste decomposition products . . . do not exceed closure requirements specified in WAC 173-303-610(2)(b).

129. 6-1, 31-34

Due to the limited scope of previous sampling event, selecting analytes of concern from analytical data generated from that event is inappropriate. Because of the number of streams and facilities which discharged to the unit, analytes of concern should not have been limited to dangerous waste known to have been disposed of at the unit. This may lead to resampling under corrective action.

Specify statistical approach utilized to determine significance.

130. 6-1, 36

Action levels are to be based on the closure performance standards specified in WAC 173-303-610(2)(b). Health based limits are not addressed in the current (or prior) closure performance standards. Currently WAC 173-303-610(2)(b)(i) states "[f]or soils, groundwater, surface water, and air, the numeric cleanup levels calculated using residential exposure assumptions according the Model Toxics Control Act Regulations, ..."

Delete the term "health-based." Modify text to reflect regulatory language and requirements.

Note: Due to the revision of the Dangerous Waste regulations in December 1993, it is advisable to elaborate on the basis for utilizing background as a closure standard at this unit.

131. 6-1, 45-49

The text fails to address sampling and analysis of "structures," (which are not described) therefore, it is assumed that sampling and analysis was not conducted. This management scenario for structures is not consistent with the Dangerous Waste Regulations, WAC 173-303-650(a)(i), which requires material to be managed as dangerous waste unless lack of contamination is verified.

Briefly describe structures (i.e., spillways) and state if they were subject to sampling and analysis. If sampling and analysis was not conducted to demonstrate the structures are not contaminated with dangerous waste, they must be managed as dangerous waste. Radiation surveys will not suffice for determining appropriate management of these structures.

132. 6-2, 1-2 — Elaborate on the basis for the determination that "no dangerous waste constituents [are] present at levels of concern [in the upper most aquifer]. Cite regulations imposing the groundwater monitoring requirements, reference source of concentrations used to evaluate "level of concern", and address duration, frequency, and results of monitoring. Address here, or in chapter 5, the requirements of WAC 173-303-650(2)(ii) which require compliance with the groundwater monitoring requirements of WAC 173-303-645. Specify where monitoring data is being compiled.

133. 6-2, 12-15 — Provide the regulatory citation or text that relieves requirements for monitoring subsoil and sediments when a TSD is clean closed.

The closure is intended to be for the expansion ponds as a unit, therefore, remove "these portions of" from the sentence.

134. 6-2, 15 — Specify that the waste water to be discharged to the unit in the future will not contain constituents regulated under the Dangerous Waste Regulations, and that the discharge will be permitted under the Washington Waste Water Discharge Permit Program, WAC 173-216.

135. 6-2, 22-25 — Elaborate on the situation of B Pond being located above two past-practice groundwater operable units. Address potential for RCRA corrective action and postclosure in addition to discussion provided.

136. 6-2, 27-43 — Final disposition of potential radioactive contamination is not adequately addressed. Discuss alternative permanent solutions to meet the closure, TPA mandated, CERCLA, and corrective action requirements.

137. 6-2, 45-46 — Address RCRA groundwater monitoring requirements. Cite chapter 5, if necessary.

138. 6-3, 27-29 — The closure plan states that structures will be sampled in order to determine if clean closure requirements have been met. This is not consistent with page 6-1, 47-49, which indicates that the structures will be managed based on the results of radiation surveys. Modify text to clarify that the structures will be managed as dangerous waste unless demonstrated otherwise, in accordance with WAC 173-303-650(6)(a)(i).

139. 6-3, 40-41 — Contaminants of concern is not the same term used and defined on page 6-1, 32 (constituents of concern). Define and use contaminants/constituents of concern consistently. Also see comment on 6-1, 31-34 and 6-1, 36.

140. 6-3, 43-45 — Delete the discussion to the main pond and ditch closure.

141. 6-4, 9-13 Discuss the continued use of the 200 Area for industrial type activities and explain that the continued use of the ponds for waste water accumulation is not inconsistent with the surrounding land use and appearance (i.e., W-049 discharge basin will be located southeast of B Pond).

142. Figure 6-1. It is not acceptable, nor appropriate to assume that final closure of the unit would be deferred to the operable unit. Delete box on lower left of page. Insert closure as surface impoundment.

Chapter 7 Closure Performance Standards

It is necessary to define terminology and function for terms used throughout this chapter such as trip blanks, spikes, etc.

Verify that information provided in appendices is consistent with discussions in the text.

143. 7-1, 7-12 Remove the word "possible" from the first sentence. The last sentence disregards the need to address groundwater, structures, and radioactive contamination.

144. 7-1, 14-17 This bullet is confusing, contradicts itself, and appears to be inconsistent with 6-1, 45-49. Specify structures to be left in place and those expected to be removed.

145. 7-1, 30-32 Groundwater activities should and have been on-going. Groundwater impact assessment is a condition of clean closure of a RCRA TSD unit.

146. 7-2, 32-38 Specify the source(s) of information and quantify the time frame for "past waste disposal practices" in the first sentence. Elaborate on the term "screening" in the last sentence. This leads to the assumption that laboratory analysis was not conducted for organics, pesticides, and PCBs.

Explain rational for not conducting analysis for Appendix IX constituents on individual soil samples.

147. 7-2, 40-44 Explain rationale for only analyzing the composite soil samples for Appendix IX constituents. The list of analytes presented in appendix D of the closure plan do not address all Appendix IX constituents. This is inconsistent with the SW-846 methods which contain Appendix IX constituents. Explain how a decision was reached by USDOE and Ecology to clean close this unit based on a modified list.

148. 7-2, 47 The portion of the sentence that states "organics were not the primary chemical constituents used by the operating facilities that discharged to the 216-B-3 Pond system" is misleading. According to the Part A, Form

3, for the unit an estimated 1,478,000 pounds (qualified as total amount released) of Hydrazine was released to the unit. Being that this is an organic substance, the large amount discharged, and the lack of detailed discharge records, it is inappropriate to diminish the significance of organics released to the unit.

149. 7-3, 1-3 — Delete "represent threats to human health or the environment" and replace with reference to specific closure performance standards.

150. 7-3, 5-8 — More detail must be provided on field screening methods, instruments, and quality assurance.

151. 7-3, 12 — Provide a discussion of the rationale and/or references on which sampling methodology was based. If methodology was developed through the Data Quality Objective process, say so, and state that documentation of the process is available in the meeting minutes or administrative record.

152. 7-3, 21-28 — If not familiar with the pond, I would not understand the reference to the trench within the A pond (and F7-1 adds no insight). Elaborate on the trench in A lobe and identify its location in one of the figures.

153. 7-3, 30-42 — Refer to comment regarding 7-3, 12. Provide a discussion of the statistical significance of the number of samples collected and analyzed.

154. 7-3, 44-51 — Discuss the disposition of the material excavated from B lobe and specify if sampling and analysis was conducted prior to disposal.

It is stated that small quantities of water have been discharged to the B lobe as a result of seepage through the overflow control structure between the 3A and 3B Ponds . . . and wave-topping the central structure.

Address how the seepage was determined and quantified and explain what is considered "small quantities." Explain how wave-overtopping would have occurred between lobes, and if such action allowed material to disperse outside the TSD unit. Explain why over-topping occurred. It appears that the quantities of waste discharged exceeded the units design capacity. Address failure of dike between lobes A and B. This paragraph appears misleading because it only discusses small volume discharges to the B lobe from A lobe.

Elaborate on the cause and extent, of the "disturbance" in the B lobe bottom.

155. 7-4, 1-10 — See comment regarding 7-3, 12.

156. 7-4, 11-32 — See comment regarding 7-3, 12.

157. 7-4, 36-37 — Elaborate on why surface background values were utilized to evaluate vadose zone contamination. Specify what analysis were conducted on background samples, and if they were collected and analyzed concurrently with the Phase I samples.

158. 7-4, 45-46 — Explain "best professional judgement." Specify if this was a joint decision with the regulators, or USDOE/WHC based. Explain how this decision was reached (i.e., DQO process, unit manager meetings, etc.).

159. 7-4, 52 — Specify the location in which the split sample was taken.

160. 7-5, 1 — Specify the location in which the duplicate sample was taken.

161. 7-5, 3-4 — Explain the purpose for equipment blanks and why they were not taken.

162. 7-5, 5-14 — Elaborate on methods used when SW-846 methods were not available. Incorporate alternative methods into appendices or administrative record. Expand on the last sentence addressing QA/QC. Explain what precision and accuracy values were provided to the laboratory. Specify if these values were a requirement of the contract, or merely provided as an indicator of laboratory performance. State if the laboratory met the requirements specified in the contract.

163. 7-5, 18 — The reference cited here is not included in chapter 9.

164. 7-5, 16 — It is crucial that the discussion provided in the text agree with the information provided in the appendices. This comment applies to all discussions of sampling and analysis conducted within this TSD unit.

165. 7-5, 21-22 — Explain the meaning and significance of "statistically dissimilar" and any implications it may have on the validity and applicability of the background values.

166. 7-5, 30-31 — Explain why most analytes were accepted as normally distributed. Hardin and Gilbert, *Comparing Statistical Tests for Detecting Soil Contamination Greater Than Background*, assumes that background has either a lognormal, or a Weibull distribution.

167. 7-5, 31-33 — Elaborate on the decision to accept the determination that background analytes are normally distributed. Explain distribution of zinc and zirconium values if they were neither normal, or log-normal.

168. 7-5, 35-38 — To diminish the significance of organics discharged to this unit is not appropriate. Explain why organic

constituents were not considered of interest. Explain how common laboratory contaminants were distinguished from wastes potentially discharged to the unit. The phrase "meaningful quantities" is useless unless quantified.

169. 7-5, 45-47 — The first sentence of this paragraph is misleading. The Phase 2 sampling was conducted due to concerns about the quality assurance and quality control procedures of the laboratory conducting the Phase 1 analysis. It may be appropriate to state that this event confirmed or supported the Phase 1 data but remove the phrase "to develop a more complete assessment." This statement also appears to be inconsistent with the text provided in 7.1.3.1.

170. 7-6, 1-3 — See comment regarding 7-3, 12.

171. 7-6, 3 — The document cited is not included in chapter 9.

172. 7-6, 11-17 — Provide more detail and rationale for choosing analytes of interest, screening technics, and priority of analytes. Explain why trip blanks were only analyzed for volatile organics. The laboratory(ies) performing Phase 1 sampling was not specified. Correct inconsistency. Specify exactly what samples Weston analyzed and why only split samples where analyzed by TMA/NORCAL. Specify if these were the only laboratories involved in analyzing Phase 2 samples.

173. 7-6, 21-36 — Describe the basis for choosing sample locations (DQO, referenced guidance, nature of contaminants, etc.).

174. 7-6, 42-44 — Specify which ponds were active at this time and the reason(s) why Ecology felt water samples should be collected. Provide discussion on the location and methodology for collecting water samples, the analytical results of the water samples, and how collection and analysis may have differed from soil analysis. Specify where the water analytical results are located and how they are distinguished from the soil data provided in the appendices.

175. 7-6, 46-52 — The first sentence refers back to Phase 1 section. The section describing Phase 1 sampling was not adequate, therefore, the deficiencies regarding that section are applicable to this section.

The commingling of borings in a stainless steel bowl would account for the lack of detection of volatile organics from laboratory analysis.

176. 7-7, 2-4 — Include applicable sections, of the appropriate date, of all internal manuals cited either in the closure plan itself, or in the administrative record. Specify types and specifications of radiation monitoring equipment.

The last sentence is confusing. It may be helpful to specify that sampling personnel used the boat as a sampling platform.

177. 7-7, 21-24 — Elaborate on the term "surface contamination." Indicate surface contamination area on an areal map of the pond.

178. 7-7, 27-28 — Define "discrete" and specify number of samples collected at this point.

179. 7-7, 42-49 — Provide rationale and/or reference guidance used to determine appropriate QA/QC.

180. 7-7 , 52 - 7-8, 2 — Indicate which metals were analyzed by which method, and the rationale for utilizing two different methods.

181. 7-8, 3-4 — SW-846 lists the 9000 series for radiological analyses which contradicts the statement that there are no SW-846 radiological methods.

182. 7-8, 43 — Specify if detection limits addressed here are method, or instrument limits.

183. 7-8, 7-8 — Incorporate applicable section, of appropriate date, of the cited internal document in the closure plan or administrative record.

Describe the regulatory driver and significance for level B validation.

184. 7-8, 26-27 — Specify if it is common practice for analytical laboratories to prepare their own blanks, and if so, provide rationale.

185. 7-8, 39 — Discuss other possibilities besides laboratory contamination for detecting metals in vadose zone samples. Specify if any of the metals detected in the soil analysis have been detected in the groundwater monitoring.

186. 7-8, 41-52 — Define "contract-required quantitation limit" and "blank validation criteria." Reference applicable guidance or regulations.

The discussion of QA/QC provided in the text to this point indicates there has been no independent oversight or evaluation of the laboratories conducting the analysis. Describe any independent performance oversight and/or auditing program imposed on the analytical laboratories performing analysis associated with this closure.

187. 7-9, 14-16 — Explain control limits and qualification of data.

188. 7-9, 18-24 — Explain why CLP protocols were performed instead of SW-846 methods. Describe any "minimal" impacts on data results and comparability to other data sets. Elaborate on "qualifiers" and where they are located. Explain who "project personnel" are, and the basis for their decision.

189. 7-9, 29-31 — Describe how long the holding time was missed for the two samples. Explain how the samples were qualified "according to holding time exceedance," and how this would impact the usefulness of this data point.

190. 7-9, 44-50 — Explain why compounds are listed as laboratory contaminants if they are below the contract-required quantitation limit. Explain why such a large number of compounds were identified as laboratory contaminants. See comment regarding 7-8, 39.

191. 7-9, 48 — Explain "target compounds" and "tentatively identified compounds" and why they are not of concern if below contract-required quantitation limit.

192. 7-10, 1 — Specify if contract-required detection limit is instrument, or method limit.

193. 7-10, 5-14 — Quantify how far out of the control limits the listed metals were, and explain the impact on the usefulness of this data (i.e., what does it mean to qualify the data).

194. 7-10, 26-32 — Analytical results are to be compared to closure performance standards, not the values presented in the *Hanford Site Background* document. Specify the source of the *Hanford Site Background* threshold values (1993). Specify the MTCA method used to calculate limits (i.e., A or B) and explain that it is now appropriate to use such values due to regulatory revisions.

195. 7-10, 34-40 — Ecology has not approved the *Hanford Site Background* document, therefore, the discussion provided in the text is not appropriate. Also the use of *Hanford Site Background* approach in evaluating the Phase 2 data is not consistent with the evaluation of Phase 1 data, which used only local background. If *Hanford Site Background* values were used, a thorough discussion of the difference between local and Sitewide background values must be provided.

196. 7-10, 48-49 — Specify the concentration in parts per million, or billion, for toluene, methylene chloride, and acetone described here as common laboratory contaminants. Explain the rationale for considering these compounds common laboratory contaminants.

197. 7-11, 6-10 Quantify the phrase "very low levels" (i.e., below background and MTCA method B values).

Provide a theory or explanation of how trip blanks were contaminated.

198. 7-11, 24-27 The purpose of the sampling and analysis is not to designate the soil and sediments, but to determine if closure performance standards have been achieved. State if any of the contaminants exceeded MTCA method B levels (method A for lead) or local background.

199. 7-11, 36 Elaborate on the phrase "chemical analyses similar to those performed on Phase 1." Specify if the list of analytes and analytical procedures differed, and if so, why.

200. 7-12, 5-7 Explain why SW-846 was not used for all sample analyzed. The terms "wet-chemistry" and "ions" are not descriptive. Explain the terms and how they differ from SW-846.

201. 7-12, 40-42 Include pertinent sections of document, of appropriate date, in the closure plan or in the administrative record.

202. 7-13, 5-7 Explain how the addition of water facilitates drilling and sampling recovery, and the impact on samples taken following the addition of water (i.e., potential dilution). Discuss measures taken to mitigate the impact on the data to be generated from this sampling point.

203. 7-13, 17 Include applicable section, of appropriate date, in closure plan or administrative record of the document cited.

204. 7-13, 31-33 Include applicable section, of appropriate date, in the closure plan or administrative record of document cited.

205. 7-13, 48-51 Explain how the addition of water facilitates drilling.

206. 7-14, 3-5 Explain how the addition of water facilitates drilling and sampling recovery, and the impact on samples taken following the addition of water (i.e., potential dilution). Discuss measures taken to mitigate or minimize the impact on the data to be generated from this sampling point.

207. 7-14, 11 Include applicable section, of appropriate date, in closure plan or administrative record of the document cited.

208. 7-14, 49 — Include applicable section, of appropriate date, in closure plan or administrative record of the document cited.

209. 7-15, 16-22 — Explain why so many different laboratories were used to analyze the data and potential impacts this may have had on the analytical results. Specify which samples went to which laboratory and why.

210. 7-15, 24-28 — Explain why CLP was used, and why certain analytes were excluded from analysis.

211. 7-15, 31-34 — Explain the basis and results of the statistical evaluation of results reported for split samples. The number of split samples collected did not appear adequate to conduct a meaningful statistical analysis. State if the number of samples were sufficient to assess the laboratories performance, and if so, which was more accurate, or precise.

212. 7-15, 37-39 — Specify if SW-846 or contractor laboratory-specified methods were used for organic analysis, or if both were performed. Explain the rationale for conducting different methods.

213. 7-15, 46 — Explain why only one split sample was analyzed for semivolatiles by EPA 8270.

214. 7-15, 51 — Define "BNA" compounds.

215. 7-16, 5-12 — Elaborate on the implications of missing holding times for the analytical data, especially the volatile and semi-volatile organic compounds.

216. 7-16, 14-21 — Explicitly explain the basis for concluding that the primary laboratory reported biased concentrations and not the other laboratory.

Elaborate on Phase 1 threshold values (i.e., local background, MTCA method B levels). "EPA protective trigger level for further investigation" is not a WAC 173-303-610 closure performance standard, therefore, delete it from the text. The last portion of the sentence states, "Ecology's MTCA Method A" cleanup level for industrial soil. MTCA level C, not A, is applicable to industrial sites. Clean closure, that which is proposed for this site, is accomplished by achieving MTCA A or B cleanup levels.

217. 7-16, 23 — Thoroughly discuss potential groundwater contamination by beryllium which was found in the vadose zone at levels above MTCA method B cleanup levels. Beryllium is moderately mobile and is very soluble as beryllium fluoride and beryllium nitrate. Address the impact of allowing further water discharges to occur at the unit.

218.	7-16, 27-31	Describe how the beryllium concentration, and contract required quantitation limits, compare to MTCA cleanup levels and to local background levels. Specify which "natural background" is being used in this paragraph (Sitewide or local).
219.	7-17, 5-12	The objective of the sampling and analysis of the pond media is not to designate it as a dangerous waste, but to determine the most appropriate mode of closure. This paragraph is quite alarming due to the fact that closure performance standards are not even addressed. In fact, an apparent lack of knowledge of the closure requirements is demonstrated. Again, the results of the soil, sediment, and water analysis are to be compared with the closure performance standards presented in WAC-173-303-610. To determine if the clean closure requirements have been met, the analytical data must indicate that any (if any) contamination at the unit is at concentrations that are at or below local site background or MTCA method B levels, period.
220.	7-17, 27	Due to the lack of understanding demonstrated in the previous section, every use of the term action level should be re-evaluated. See previous comment.
221.	7-17, 38	Typo makes sentence difficult to understand.
222.	7-19, 3	Include applicable section, of appropriate date, in closure plan or administrative record.
223.	7-19, 19-20	All items out of compliance must be reported to Ecology. Items which cannot be or are not immediately fixed, need to be specified when reporting to Ecology.
224.	7-19, 33	The "final report" must also be submitted to Ecology.
225.	7-20, 12-14	It is stated that the piezometers will be maintained for continued use to monitor seepage through the dike. Earlier in the text, it was noted that some of the piezometers are not functioning and, it is unclear which are operating properly and which are not. Some of the piezometers were said not to be contacting the surface of the water table. Modify text to correct inconsistency, and reflect the actual status and expected disposition of the piezometers.
226.	7-20, 16-31	This section applies to the (other) closure of the main pond and ditch. To avoid confusion, explicitly state that this applies to the main pond/ditch unit closure. Elaborate on the groundwater monitoring borehole (699-43-42). Where is it located in relation to the units, when was it installed, and for what purpose, how long has it been out of service, and how will this impact groundwater data accumulation and evaluation.

Include applicable section, of appropriate date, of internal manuals cited in closure plan or administrative record.

227. 7-21, 12-14 — The discussion to consolidate the concrete demolition waste and the need for sampling is still pending. This cannot be decided until disposal options are identified.

228. 7-21, 17-30 — The concern for potential radioactive contamination implies that there is possible chemical contamination. Indicate where radiologically released waste would be disposed.

Include applicable section, of appropriate date, of internal manuals cited in closure plan or administrative record.

229. 7-22, 15-19 — Indicate where radiologically released waste would be disposed. The lack of sampling required for the concrete cannot be decided until a diposal option is identified.

230. 7-22, 28 — Include applicable section, of appropriate date, of internal manuals cited in closure plan or administrative record.

231. 7-22, 30-32 — Section 7.2.8 does not exist. Modify text to correct error.

232. 7-22, 41-49 — Include applicable section or entire manual, of appropriate date, of internal manuals cited in closure plan or administrative record.

233. 7-23, 11-13 — Clarify if the safety analysis report is used for dangerous waste, or only for mixed waste.

234. 7-25, 23 — Include applicable section, of appropriate date, of internal manuals cited in closure plan or administrative record.

235. 7-25, 38-40 — The continued monitoring of groundwater will be required as a function of the post-closure permit for the main pond and ditch, if clean closure cannot be demonstrated. It will also be maintained in order to monitor discharges to the expansion ponds (if clean closed) and to assess potential impacts of adjacent water discharges (W-049) or extractions (pump and treat).

236. 7-25. 42-51 — The location of the closure plan identified appears incorrect. Would it not be maintained in the administrative record room or the technical library. If the location specified is correct, provide a room, and/or contact within the building.

237. 7-26, 3-4 Address the disposition of the plan once closure is complete and certified.

238. 7-26, 21-23 Clarify why WHC would not be a signatory to the closure, as they are in other Hanford Dangerous Waste management permits. Also the form provided in the closure plan (F7-4) includes a signature block for a USDOE representative. Page iii WHC identified as a "co-operator".

239. Chapter 7 Figures It would be helpful if one map indicating the location of all samples, including local background, which distinguishes the different sampling phases could be included with those figures already presented.

Also cross-sectional maps, especially for Phase 3 sampling, would be helpful. Such maps should indicate on legend: depth of sampling, estimated depth to water table, the estimated change in distance to the water table, and the depth of all wells and piezometers around the units indicating which are functioning.

240. Tables All tables in chapter 7 need descriptive titles. By looking at the tables, it is impossible to determine which table is applicable to what sampling event, or laboratory. From the text, it was not clear that all samples were analyzed utilizing the same parameters.

241. T7-2 U.S. Testing Co. method is not descriptive enough. Include applicable section, of appropriate date, of internal manuals cited in closure plan or administrative record.

242. T7-5 U.S. Testing Co. method is not descriptive enough. Include applicable section, of appropriate date, of internal manuals cited in closure plan or administrative record.

Chapter 8 Postclosure Plan

In light of the deficiencies noted in the closure plan above, especially groundwater. A more appropriate and realistic postclosure plan must be developed for the expansion ponds. This chapter does not address postclosure activities associated with the expansion lobes, but appears to be an excerpt from the main pond and ditch closure plan.

243. 8-1, 4-6 Disposal units must have written postclosure plans. Contingent postclosure plans are required for surface impoundments in which dangerous wastes are intended to be removed or decontaminated at closure, WAC 173-303-610(8)(a). This is further supported by the fact that the unit does not meet the liner requirements of WAC 173-303-650(2)(a)(i). Although removal of waste has not been purposed, if clean closure standards cannot be met, postclosure activities will be required. Irregardless, a contingent postclosure plan is required due to the above cited regulations.

244. 8-1, 6-12 — It is inappropriate to discuss "other portions" of the unit. This is misleading due to the fact that the unit referred to is two distinct units, independent of each other. The focus here is on the expansion ponds postclosure plan, not on the main pond and ditch, or on the preexisting unit as a whole.

245. 8-1, 17 — Use a term that clearly identifies the unit being addressed in place of the term "facility". An inspection schedule needs to be proposed. Specify if the contingent postclosure period is proposed to be 30 years. If not 30 years, provide justification for allowing a shorter postclosure period.

246. 8-1, 28-35 — Include waste containment system in the bulleted list of items to be inspected. Specify if these visual inspections will be the only evaluation of the groundwater monitoring systems adequacy.

247. 8-1, 45-47 — The requirements of both WAC 173-303-645, and FFACO Milestone 24 would be conditions of the postclosure permit.

248. 8-2, 29 — Delete the "(a)" after the WAC 173-303-610 citation.

249. 8-3, 5 — The phrase "in fee simple" is not familiar. Removal of the phrase would maintain the meaning of the statement without confusing readers.

250. 8-3, 10-11 — Delete the "Pond System" and replace with expansion ponds. Also delete the phrase "under the terms of regulations promulgated . . . Ecology (whichever is applicable)," due to the fact that many wastes were disposed of at the unit, prior to USDOE conforming to environmental regulations due to their position that they were exempt.

251. 8-3, 16 — The WAC citation should be WAC 173-303-610(10)(b), not (7)(d). The federal citation was not checked.

252. 8-3, 19-22 — The second portion of the paragraph starting with "and ascertain" does not appear consistent with the requirements of WAC 173-303-610(10)(b) which requires the owner or operator to . . . notify potential purchaser through some instrument which is normally examined during title search. Therefore, delete this paragraph.

253. 8-3, 24-30 — This paragraph is confusing. First, it states the survey plat has been filed. The survey plat is required to be filed within sixty days of certification of closure. Second, the phrase in parenthesis "whichever are applicable" implies that USDOE is not sure who to file the survey plat with even though they say they have already filed it. Rewrite paragraph after confirming if, and when, and to whom, the survey plat was filed.

254.	8-3, 41-42	Specify how long, and where, documentation will be retained.
255.	8-3, 44-45	USDOE cannot independently self-certify completion of postclosure. Both the owner and operator, and an independent registered professional engineer must sign the certification of completion of postclosure, WAC 173-303-610(11).
256.	8-4, 1-14	This section should be incorporated with the previous section. See previous comment.

CORRESPONDENCE DISTRIBUTION COVERSHEET

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J. J. Wallace, Ecology	J. D. Bauer, RL R. E. Lerch, WHC	Incoming 9403697

Subject: 216-B-3 EXPANSION PONDS CLOSURE PLAN, REVISION 1, NOTICE OF DEFICIENCY

INTERNAL DISTRIBUTION

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		W. T. Dixon, Assignee	H6-21	
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		D. G. Farwick	H4-16	
		C. J. Geier	R2-36	
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		P. D. Mix	H6-29	
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